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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/561,334

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Douglas Roberts

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EXAMINER

KIMBALL, JEREMIAH T

ART UNIT

PAPER NUMBER

4158

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/561,334	Applicant(s) ROBERTS ET AL.	
	Examiner JEREMIAH KIMBALL	Art Unit 4158	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/15/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/15/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. **Claims 6 and 21** are objected to because of inconsistent terminology (i.e. "said detector" and "said circuit," respectively) within line 2. Claims 6 and 21 should instead read as follows: "said electrode deployment detector" and "said AC circuit," respectively. Appropriate correction is required. See MPEP § 608.01.
2. **Claims 13, 14 and 17-19** are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. **Method claims cannot depend upon or further limit apparatus claims and vice-versa.**
3. **Claims 13 and 14** are objected to because of the following minor informalities: the claims upon which they supposedly depend are "method" claims, not "apparatus" claims. Appropriate correction is required.
4. **Claims 17 and 19** are objected to because of a mistyped word within line 1. Claims 17 and 19 should read as follows: "The method claim of 11..." and "The method claim of 18...", respectively. Appropriate correction is required. See MPEP § 608.01.

Claim Rejections - 35 USC § 102

5. **The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:**

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 1-3, 7, 8, 10-14, 17, 18, 20, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Brewer et al. (US 5,700,281), hereinafter Brewer.**

7. In regards to apparatus **claim 1**, Brewer discloses an apparatus comprising: an electrode 50 with attached lead wire 56; a conductor 63; a source of alternating current 86; and an electrode deployment detector (within Fig. 8) configured for : monitoring a magnitude, of an electrical characteristic (i.e. impedance) measured from an electrical circuit having from said source an alternating electric current path that includes said electrode with attached lead wire, said conductor, and a space or other electrical insulator (i.e. air) intervening between said conductor and said electrode with attached lead wire, said conductor being disposed in proximity of said electrode with attached lead wire to create capacitance in said electrical circuit; and identifying, based on said magnitude, an occurrence of at least one of handling of said electrode with attached lead wire and removing of said electrode with attached lead wire from a package 212 containing said electrode, with attached lead wire (Col. 4, Line 5 - Col. 5, Line 18; Col. 7, Line 57 - Col. 8, Line 16; Fig. 1-7). Brewer teaches all the elements of the device but does not explicitly teach said source producing alternating current. However, impedance, by definition, is the measure of the opposition to a sinusoidal alternating current (AC), extending the concept of resistance to AC circuits. Therefore, measuring impedance from an electrical circuit inherently implies the source of current to the electrical circuit is producing alternating electric current.

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8. In regards to apparatus **claim 2**, Brewer discloses the limitations set forth in claim 1 and wherein said electrical circuit is configured so that said magnitude varies with said capacitance. Well known in the art, the electrical characteristic measured (i.e. impedance) is the sum of R and X, where R represents resistance and X represents capacitive reactance. Capacitive reactance depends directly on capacitance and therefore, said magnitude varies with said capacitance.

9. In regards to apparatus **claim 3**, Brewer discloses the limitations of claim 1 and wherein said electrical circuit includes an integrator (i.e. impedance measuring circuit 100) in series with said capacitance (Col. 7, Line 38 - Col. 8, Line 16; Fig. 8).

10. In regards to apparatus **claim 7**, Brewer discloses the limitations of claim 1 and wherein the alternating electric current path further includes another electrode and attached lead wire (Col. 4, Lines 42-44; Fig. 2).

11. In regards to apparatus **claim 8**, Brewer discloses the limitations of claims 1 and 7 and wherein the alternating electric current path further comprises an electrically conductive medium (i.e. flexible conductive connector 64) disposed between the electrodes that provides a pathway for flow of electric current from one of the lead wires to the other by means of the electrodes and said medium (Col. 4, Lines 30-31).

12. In regards to apparatus **claim 10**, Brewer discloses the limitations of claim 1 and wherein the apparatus comprises a defibrillator 10 that is configured to issue a sequence of user prompts and to advance from a particular one of the user prompts to a next one of the user prompts upon said identifying (Col. 7, Lines 6-7; Col. 8, Lines 54-67; Fig. 8).

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13. In regards to method **claim 11**, Brewer discloses a method comprising the steps of: monitoring a magnitude of an electrical characteristic (i.e. impedance) measured from an electrical circuit having from an alternating current source an alternating electric current path that includes an electrode with attached lead wire, a conductor, and a space or other electrical insulator intervening between said conductor and said electrode with attached lead wire, said conductor being disposed in proximity of said electrode with attached lead wire to create capacitance in said electrical circuit; and identifying, based on said magnitude, an occurrence of at least one of handling of said electrode with attached lead wire and removing said electrode with attached lead wire from package containing said electrode with attached lead wire (Col. 7, Line 57 – Col. 8, Line 67; Fig. 1, 7, and 8).

14. In regards to method **claims 12-14, 17, 18, and 20**, claimed limitations are substantially similar in scope to matter rejected in earlier claims above by the Brewer disclosure. (**Claims 13, 14, 17, and 18** are examined as assumed it was intended to have been written by applicant.)

15. In regards to apparatus **claim 21**, Brewer discloses an apparatus comprising: an alternating current (AC) source 86; an AC circuit powered by said source and having a complex-impedance-generating element (i.e. contents of package 212) with at least one electrode pad 50 that is within said **[AC]** circuit, said generating element being expandable from a package containing said element to change a voltage drop across said element; and an electrode deployment detector (within Fig. 8) configured for monitoring a magnitude of an electrical characteristic (i.e. impedance) measured from

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said circuit to identify, based on said magnitude, an occurrence of at least one of handling of said element and removing of said element from said package (Col. 7, Line 57 – Col. 8, Line 67; Fig. 1, 5, and 8). (**Claim 21** is examined as assumed it was intended to have been written by applicant.)

Claim Rejections - 35 USC § 103

16. **The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:**

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. **The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:**

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

18. **Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brewer in view of Cansell (US 4,165,749).**

19. In regards to apparatus **claim 4**, Brewer substantially discloses all the limitations of claims 1 and 3 above, except wherein said electrical circuit includes a rectifier for rectifying input voltage to the integrator. Attention is directed towards the secondary reference of Cansell, which discloses a medical device for electroshock therapy (i.e. defibrillator or AED) that includes a high-voltage generator comprising a transformer

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with a rectifier connected to its output for charging a shunt capacitor which can be discharged through the patient by means of electrodes connected to it (Col. 1, Lines 5-12). Rectifiers, by definition, are electrical components which rectify an input voltage, converting AC current to DC current. Brewer and Cansell are concerned with the same field of endeavor, namely the design of cardiac defibrillators. Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify Brewer by incorporating a rectifier within said electrical circuit for a cardiac defibrillation device, as taught by Cansell, in order to rectify the input voltage to the integrator.

20. Claims 5, 9, 15, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brewer in view of Matthews et al. (EP 57,561), hereinafter Matthews.

21. In regards to apparatus **claim 5**, Brewer substantially discloses all the limitations of claim 1 above, except wherein said source periodically shifts between different frequencies of alternation. Attention is directed towards the secondary reference of Matthews, which discloses a muscle stimulator comprising: a source of electrical signals; a plurality of electrodes adapted to be applied adjacent respective locations on the epidermis of a person to stimulate underlying muscles; the source of electrical signals comprising a pulse generator for producing a train of muscle stimulating pulses which are sequentially applied by a time division multiplexer 15-18 to electrode pairs (Abstract, Par. 1; Fig. 1). Brewer and Matthews are concerned with the same field of endeavor, namely the design of therapeutic devices for delivering electrical stimulation to muscles using electrodes placed on the surface of the skin. Therefore, it would have

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been obvious to one having ordinary skill in the art at the time of the invention to modify Brewer by incorporating a time division multiplexer within an electrical stimulation device utilizing electrodes, as taught by Matthews, in order to alternate between two impedance-monitoring modes.

22. In regards to apparatus **claim 9**, the Brewer and Matthews combination discloses all of the limitations of claims 1, 7, and 8 above and wherein activation of a source for the electric current from one of the lead wires to the other and activation of said source of alternating current are alternated in a time division manner (Matthews - Abstract).

23. In regards to method **claims 15 and 19**, claimed limitations are substantially similar in scope to matter rejected in earlier claims above by the Brewer and Matthews combination. (**Claim 19** is examined as assumed it was intended to have been written by applicant.)

24. **Claims 6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brewer in view of Matthews as applied to claims 5 and 15 above, and further in view of Thu et al. (US 6,336,047), hereinafter Thu.**

25. In regards to apparatus **claim 6**, the Brewer and Matthews combination discloses all of the limitations as set forth in claims 1 and 5 above, except wherein said electrical circuit is configured so that said magnitude varies with said capacitance, and wherein said **[electrode deployment]** detector is configured to perform said identifying based on at least one of a sum and a difference between measurements of said magnitude that correspond to respective ones of said frequencies. Attention is directed to the tertiary reference of Thu, which discloses a system for measuring the positioning of

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electrode pads for a defibrillator (AED). Thu's system utilizes oscillators 8 that emit two different frequencies (i.e. dither frequencies) to determine if electrodes are properly positioned, and if so, automatically enters training mode. The ratio between the signal (i.e. impedance) strength from the amplifiers 7 (i.e. means for providing a sum of measurements) after the band-pass filters 6 (i.e. means for providing a difference between measurements) will give information regarding electrode positioning (Col. 4, Lines 4-31; Fig. 2-7).

Brewer, Matthews, and Thu are concerned with the same field of endeavor, namely the design of therapeutic devices for delivering electrical stimulation to muscles using electrodes placed on the surface of the skin. Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the Brewer and Matthews combination by incorporating configuring said electrical circuit so that said magnitude varies with said capacitance, and said electrode deployment detector is configured to identify electrode position based on at least one of a sum and a difference between measurements of said magnitude that correspond to respective ones of said frequencies, as taught by Thu, for the purpose of measuring the distance between AED electrodes by using the concepts of capacitance and impedance. (**Claim 6** is examined as assumed it was intended to have been written by applicant.)

26. In regards to method **claim 16**, claimed limitations are substantially similar in scope to matter rejected in earlier claims above by the Brewer, Matthews, and Thu combination.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEREMIAH KIMBALL whose telephone number is (571)270-7029. The examiner can normally be reached on 8am-6:30pm Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Jackson can be reached on 571-272-4697. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. K./
Examiner, Art Unit 4158

/Gary Jackson/
Supervisory Patent Examiner
Art Unit 4158
9/15/08